Disengaging apparatus examined or tested and marked as required	46 CFR 199.45(b) SOLAS 74/78 III/41 MSM Ch. 6.R.3.a		Lifeboat winches  • Brakes	46 CFR 199.199(i) SOLAS 74/78 III/19 MSM Ch. 6.R.3.a
<ul> <li>Universal joints</li> <li>Safety latches</li> <li>Hooks</li> <li>Locking knuckles</li> <li>Frame</li> </ul>	MOW CIT. U.N.J.a		<ul> <li>Controls</li> <li>Cranks</li> <li>Covers</li> <li>Limit switches and electrical controls</li> </ul>	IVIOIVI OII. U.N.S.a
<ul> <li>Motor lifeboats*</li> <li>Engine operating test</li> <li>Cooling water pump</li> <li>Ahead and astern test</li> <li>Fuel tanks</li> <li>Searchlight test (passenger vessels)</li> </ul>	46 CFR 199.45(b) SOLAS 74/78 III/41 MSM Ch. 6.R.3.e		<ul> <li>Embarkation aids</li> <li>Ladders</li> <li>Access</li> <li>Spans and lifelines</li> <li>Illumination</li> <li>Frapping and tricing lines</li> </ul>	46 CFR 199.190(f) SOLAS 74/78 III/11 MSM Ch. 6.R.3.t
<ul> <li>Annual fuel changed</li> <li>Extinguishers serviced</li> <li>Hand-propelled lifeboats*</li> </ul>	46 CFR 199.45(b)		Lifeboat weight test  Light load  Full load: date	46 CFR 199.45(b) SOLAS 74/78 III/19 MSM Ch. 6.R.3.a
<ul> <li>Flemming gear</li> <li>Transmission oil</li> <li>Radio installation for lifeboats complies with FCC and/or international convention (where required)</li> </ul>	46 CFR 199.60 SOLAS 74/78 III/6 MSM Ch. 6.R.3.I		<ul> <li>Launching instructions posted</li> <li>Equipment and stowage</li> <li>Annual service dates</li> </ul>	46 CFR 199.190 SOLAS 74/78 III/19 SOLAS 74/78 III/26 MSM Ch. 6.R.3.f 46 CFR 199.190(g)
<ul><li>Portable</li><li>Fixed</li></ul>				
Lifeboat operational test	46 CFR 199.45(b) SOLAS 74/78 III/19 MSM Ch. 6.R.3.a		Hydro release service dates	46 CFR 199.190(h) MSM Ch. 6.R.3.h
Davits  Foundations  Moving parts  Fittings  Fairleads, cleats, or cruciform bits	46 CFR 160.032 SOLAS 74/78 III/48 MSM Ch. 6.R.3.a		<ul> <li>Weak link</li> <li>Float free</li> <li>Illumination</li> </ul>	
Falls (date last renewed or end-for-ended)	46 CFR 199.190(j) SOLAS 74/78 III/48 MSM Ch. 6.R.3.a(1)		<ul> <li>Markings</li> <li>Capacities</li> </ul>	
ns tested in conjunction with Abandon Ship Drill.		Notes	Launching devices tested	MSM Ch. 6.R.3.d

Lifeboat equipment and stowage (use table below to determine required equipment)

46 CFR 199.175 SOLAS 74/78 III/41

Item	ltem		ational age	Short International Voyage		
Number		Lifeboat	Rescue Boat	Lifeboat	Rescue Boat	
1	Bailer <sup>1</sup>	1	1	1	1	
2	Bilge pump <sup>2</sup>	1		1		
3	Boathook	2	1	2	1	
4	Bucket <sup>3</sup>	2	1	2	1	
5	Can opener	3		3		
6	Compass	1	1	1	1	
7	Dipper	1		1		
8	Drinking cup	1		1		
9	Fire extinguisher	1	1	1	1	
10	First aid kit	1	1	1	1	
11	Fishing kit	1				
12	Flashlight	1	1	1	1	
13	Hatchet	2		2		
14	Heaving line	2	2	2	2	
15	Jackknife	1		1		
16	Knife <sup>1,4</sup>		1		1	
17	Ladder	1	1	1	1	
18	Mirror, signalling	1		1		
19	Oars, units <sup>5,6</sup>	1	1	1	1	
20	Painter	2	1	2	1	
21	Provisions (units/persons)	1				
22	Pump <sup>7</sup>		1		1	
23	Radar reflector	1	1	1	1	
24	Rainwater collection device	1		1		
25	Repair kit <sup>7</sup>		1		1	
26	Sea anchor	1	1	1	1	
27	Searchlight	1	1	1	1	
28	Seasickness kit (units/person)	1		1		

	Immersion suits	46 CFR 199.273
	<ul><li>Condition</li><li>Retro-reflective material</li></ul>	SOLAS 74/78 III/27.3 SOLAS 74/78 III/30.2.7 MSM Ch. 6.R.3.n
	Placard of lifesaving signals	46 CFR 35.12 SOLAS 74/78 V/16
	Pilot ladder and hoists in good condition	46 CFR 32.90-1 SOLAS 74/78 V/17 MSM Ch. 6.R.3.t MSM Ch. 6.R.3.u
	Station bill posted	46 CFR 35.10-1 46 CFR 199.80 SOLAS 74/78 III/8.3
	Distress signals	46 CFR 199.60
	12 rocket parachute flares	SOLAS 74/78 III/6.3
<u>Fire</u>	Protection Equipment:	
	<ul> <li>Fire control plan</li> <li>Permanently posted</li> <li>Copy permanently stored in weathertight</li> </ul>	46 CFR 35.10-3 SOLAS 74/78 II-2/20
	container outside deckhouse  Portable extinguishers  Annually serviced  Bottles hydrostatically tested (every 5 years)  Markings (weight and hydrostatic test date)  Spare charges, spare extinguishers	46 CFR 34.05-10 46 CFR 34.50 46 CFR 31.10-18(a) SOLAS 74/78 II-2/6 SOLAS 74/78 II-2/21 MSM Ch. 18.I.3 NVIC 7-70 NVIC 13-86
	Semiportable extinguishers  Annually serviced  Bottles hydrostatically tested (every 12 years)  Controls, instructions, markings  Hose and diffuser  Flexible loops tested or replaced (same as bottle)	46 CFR 34.05-10 46 CFR 34.50 46 CFR 31.10-18(a) SOLAS 74/78 II-2/6 SOLAS 74/78 II-2/21 MSM Ch. 18.I.4 NVIC 13-86
Notes	:	

<u>Iner</u>	t Gas Systems:		П	Fire stations	46 CFR 34.10-10
	% concentration of nitrogen in vapor space	46 CFR 32.53 SOLAS 74/78 II-2/62 MSM Ch. 15		<ul> <li>Hydrants (2 effective streams)</li> <li>Nozzles and spanners</li> <li>Fog applicators (&lt;6 feet in length, in engineroom)</li> <li>Hose <ul> <li>UL approved</li> <li>Correct length</li> </ul> </li> </ul>	46 CFR 34.10-10 NVIC 6-72, Change 1 SOLAS 74/78 II-2/4 SOLAS 74/78 II-2/21 MSM Ch. 18.1.9 MSM Ch. 19.1.7 46 CFR 34.25-20
	% oxygen vapor			Markings	46 CFR 32.05-5
	Provisions for hold space and tank pad		_	Equipment compatible	
	Sampling / testing of gas pad			Total length of all hose tested	46 CFR 34.10-10 MSM Ch. 18.I.6
	Gas generator or spare gas on board	46 CFR 32.53-20		<ul> <li>Hydrostatically tested to at least 100 psi</li> <li>Proper threads</li> </ul>	46 CFR 31.10-18(g)
	General			Approved hose	
	<ul> <li>Supply capacity adequate</li> <li>Positive pressure</li> <li>Independent blowers</li> <li>Oxygen detector and recorder</li> <li>Pressure indicator and recorder</li> <li>Portable detecting instruments</li> <li>Alarms and controls</li> </ul>	46 CFR 32.50-30 46 CFR 32.53-45 46 CFR 32.53-60		Structural fire protection  Bulkheads Insulation	46 CFR 32.56 46 CFR 32.57 46 CFR 34.05 46 CFR 34.10 46 CFR 34.15 46 CFR 35.10-3 SOLAS 74/78 II-2/42
	<ul> <li>High oxygen alarm (&gt; 8%)</li> <li>Low pressure alarm (&lt; 100mm)</li> <li>Loss of water supply to deck water seal alarm and shutdown</li> <li>High inert gas temperature (&gt; 150°F) alarm and shutdown</li> </ul>	40 CFR 32.33-70		<ul> <li>Fire doors and controls tested</li> <li>Machinery space and stair towers</li> <li>Not tied or blocked open</li> <li>Installed closure devices working</li> </ul>	46 CFR 32.56-35 46 CFR 111.103-1 SOLAS 74/78 II-2/46 SOLAS 74/78 II-2/47
	<ul> <li>Loss of water supply to scrubber alarm and shutdown</li> <li>Automatic shutdown valve</li> </ul>	46 CFR 32.53-75		Remote controls to power ventilation marked and tested	46 CFR 111.103-1
Vap	Instruction manual     or Control Systems:	46 CFR 32.53-85		Closures for spaces protected by fixed smothering systems	
	Piping	46 CFR 39.20-1		International shore connection	46 CFR 34.10-15(d)
	Drain lines				SOLAS 74/78 II-2/19
	Electrically bonded to hull			Fire axe	46 CFR 34.60
	<ul><li>Flange stud</li><li>Vapor connection painted red / yellow / red and</li></ul>			<ul> <li>Markings</li> </ul>	46 CFR 32.05-5
Notes	labeled vapor in 2-inch black letters :		Notes	S:	

Ш	Cargo tanks			Oily waste retention	33 CFR 157.17
	<ul><li>Trunks and hatches</li><li>Ullage openings</li></ul>	40.050.00.00	•	<ul><li>Bilge</li><li>Tank</li></ul>	MSM Ch. 31.D.7
	Liquid level gauges	46 CFR 32.20-20 46 CFR 39.20-3		Ballast discharge	33 CFR 155.330 33 CFR 155.350
	Open Restricted Closed		•	Acceptable processing equipment	33 CFR 155.350 33 CFR 155.360 33 CFR 155.370 MSM 31.D.10
	<ul> <li>Liquid level devices</li> <li>Deck penetrations</li> <li>Heating coils</li> <li>Explosion-proof electrical fittings</li> <li>Overfill device</li> </ul> Cargo piping	46 CFR 32.22T 46 CFR 32.50-15 46 CFR 111.105 33 CFR 155.840 46 CFR 32.50-15	_	Dily bilge discharge  Piping system Stop valve Standard discharge connection Pump stop Prohibited oil spaces	33 CFR 155.380 33 CFR 155.430 33 CFR 155.470
	<ul><li>Expansion joints</li><li>Controls</li></ul>	33 CFR 156.170 46 CFR 56.30		Emergency shutdown	33 CFR 155.780
	<ul> <li>Supports</li> <li>Hoses</li> <li>Valves</li> <li>External examination</li> <li>Hydrostatic test</li> <li>Markings</li> <li>Cargo oil containment</li> <li>Size</li> <li>Drains</li> <li>Scupper closures</li> </ul>	46 CFR 56.35  46 CFR 56.20  46 CFR 32.50-30  33 CFR 155.800  33 CFR 156.170  33 CFR 154.500  33 CFR 155.310  SOLAS 74/78 II-2/59		Discharge removal equipment  Sorbents  Non-sparking tools  Containers  Emulsifiers  Protective clothing  Scupper plugs	33 CFR 155.205 33 CFR 155.210 33 CFR 155.790 33 CFR 151.63 MARPOL Ax. V/3
Notes	:		Notes:		

	Catwalks, lifelines at hazardous places, cable traveler	46 CFR 32.02-10		
	Elevators	46 CFR 111.91		
	Watertight doors in subdivision bulkhead tested by:	46 CFR 111.97 46 CFR 170.248		
	<ul><li>Local and remote control</li><li>Alarms</li><li>Markings</li></ul>	46 CFR 170.270 MSM Ch. 6.I.5.e		
	Cargo gear examined (in absence of Cargo Gear Certificate)	46 CFR 31.10-16 46 CFR 31.37		
	<ul><li>Records</li><li>Safe Working Load markings</li></ul>			
	Exercise valves and controls	46 CFR 38.10		
	<ul> <li>Bilge valves</li> <li>Overboard discharge valves</li> <li>Equalizing valves</li> <li>Emergency shutoff valves</li> <li>Scupper valves</li> <li>Remote control</li> <li>Reach rods</li> </ul>			
	Bilge wells, cofferdams, and suctions	46 CFR 56.50-50		
	Bulkhead penetrations	MSM Ch. 6.F.6		
	<ul><li>Piping protection</li><li>Removable guards (where required)</li><li>Baggage spaces</li></ul>	MSM Vol. IV Ch. 3.G.2.b		
	Hull marks	46 CFR 67.120		
	<ul><li>Name</li><li>Hailing port</li><li>Official number</li><li>Net tonnage</li></ul>	46 CFR 32.05-10		
Notes:	·			

# Section 4: Additional Inspection Items for Vessels Carrying Dangerous Chemicals in Bulk

### **Emergency Equipment:**

- O Safety gear lockers
  - Proper locations (minimum of 2)
  - Labeled "Safety Equipment"
  - Proper type and amount of safety equipment

46 CFR 153.214

Familian and	Amount Required per Safety Gear Locker Location					
Equipment -	Primary Shutdown Station	Secondary Shutdown Station				
2 stretchers with lifting equipment	1	1				
30-minute SCBA	3	2				
SCBA refill tanks	11	6				
First aid equipment	2	1				
Overalls or long apron	2	1				
Boots	2	1				
Long-sleeved gloves	2	1				
Goggles	2	1				
Steel-cored lifeline with harness	2	1				
Explosion-proof flashlight	2	1				

- O Self-contained breathing apparatus
  - Material condition
  - Operation
- O Decontamination showers and eye wash on 46 CFR 153.216 deck
  - Operation

Notes:

Suitably marked

	Galley	MSM Ch. 6.P.8	0	Special tank linings	46 CFR 153.266
	<ul><li>Equipment</li><li>Sanitation</li></ul>	MSM Ch. 13.C	0	Heating system	46 CFR 153.430
	Ventilation  Means of escape from accommodation,	46 CFR 32.02-1		<ul> <li>If toxic cargoes only, system must be separate from vessel's heating system and contamination detection must be available</li> </ul>	
	<ul><li>machinery, and other spaces</li><li>Two required (some exceptions)</li></ul>	SOLAS 74/78 II-2/45	0	Cooling system	46 CFR 153.432
	<ul> <li>Dead end corridors</li> <li>Absence of locks</li> </ul>		0	Cargo high pressure and temperature alarms  • Audible	46 CFR 153.438
	Notices and markings where required  Conspicuous  Legible	46 CFR 35.40		<ul><li>Visual</li><li>Location</li></ul>	
	Proper size  Con frequent for repairs		<u>Car</u>	go Piping:	
_	Gas freeing for repairs  • Current Gas Chemist Certificate for areas as	MSM Ch. 5.I	0	Material condition	
	required  Date Chemist No.			<ul><li>Annual hydrostatic test</li><li>Properly marked</li></ul>	33 CFR 156.170 46 CFR 15.294
	Paint stowage	46 CFR 32.85	0	Valves	46 CFR 153.283
	Closures     Fireproof / metal lined	SOLAS 74/78 II-2/18.7	_	<ul><li>Tank valves</li><li>Hose connection points</li></ul>	
	<ul> <li>Lighting / electrical</li> <li>Fire protection</li> <li>Markings</li> </ul>		0	<ul><li>Agreement with plans</li><li>New piping</li><li>No unauthorized modification</li></ul>	46 CFR 153.910
	Storerooms		0	Prohibited materials	46 CFR 153.236
	<ul><li>Stowage</li><li>Fire hazards</li><li>Lighting and wiring</li></ul>			<ul> <li>Aluminum or aluminum alloys</li> <li>Copper or copper alloys</li> <li>Zinc, galvanized steel, or alloys having &gt; 10% zinc</li> </ul>	
	Oxygen sensor (oxygen analysis equip.)	SOLAS 74/78 VI/3.1		<ul><li>Magnesium</li><li>Lead</li></ul>	
	Combustible gas indicator	46 CFR 35.30-15 NVIC 12-86		<ul><li>Silver or silver alloys</li><li>Mercury</li></ul>	
	LPG systems, cylinders, tests	46 CFR 61.15-10	Notes	e:	
lotes	:		Notes	o	

	<ul> <li>Radio equipment</li> <li>Radios, RDF, Loran</li> <li>Electronic position fixing device tested</li> <li>GMDSS meets requirements for vessel operating area</li> <li>Internal communications and control system</li> <li>EOT failure alarms</li> <li>Telephones</li> <li>Voice tubes</li> <li>Emergency loudspeaker system</li> <li>Public address system</li> <li>Bell pulls</li> <li>Pilothouse controls</li> </ul>	47 CFR Part 80 33 CFR 26.03 SOLAS 74/78 V/7 SOLAS 74/78 V/12 33 CFR 164.41 NVIC 9-93 46 CFR 113.30 46 CFR 113.35 MSM Ch. 6.L.4 MSM Ch. 6.R.2.g 46 CFR 32.30-1	<ul> <li>Height above highest cargo area working level</li> <li>Directed vertically upward</li> <li>Flame arrestor (where required)</li> <li>Weather hood</li> <li>Flame screens</li> <li>Located away from air intakes and openings to accommodation spaces</li> <li>P/V valves</li> <li>Material condition</li> <li>Operation</li> </ul>	46 CFR 153.350 46 CFR 153.351 46 CFR 153.352 46 CFR 153.368 46 CFR 153.463
	Navigation lights and signals  Control panels Running lights Anchor lights Special day and night signals Distress signals and stowage Flag signals, international code Whistle, light, bells, gongs Day and night signal devices	72 COLREGS 46 CFR 111.75-17 MSM Ch. 6.L.5.c MSM Ch. 18.L.3 MSM Ch. 18.J	Open Restricted Closed	46 CFR 153.400 46 CFR 153.409
	<ul> <li>Certificate of Alternate Compliance</li> <li>Steering gear</li> <li>Main gear tested (all stations)</li> <li>Auxiliary gear tested (all stations)</li> <li>Instructions and markings</li> <li>Rudder angle indicator</li> <li>Illumination</li> <li>Alarms</li> <li>Block diagram</li> </ul>	33 CFR 81.9  46 CFR 31.10-15  46 CFR 61.20-1  46 CFR 58.25  33 CFR 164.35  33 CFR 164.39  46 CFR 113.43  SOLAS 74/78 II-1/29  SOLAS 74/78 II-1/30  SOLAS 74/78 V/19-1  SOLAS 74/78 V/19-2  MSM Ch. 14.B  NVIC 1-69  NVIC 1-81	• Set points	46 CFR 153.408 46 CFR 153.935(a)
Notes	:		Notes:	

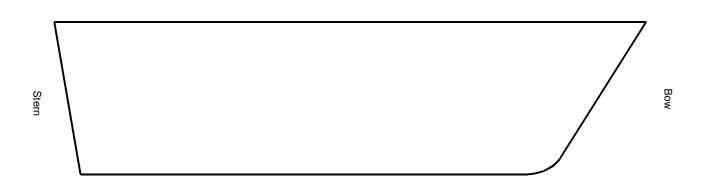
	Vessel response plan  Approved by Coast Guard  Annual review by owner / operator  Verify vessel has access to shore-based computerized damage stability programs  Oil transfer procedures	33 CFR 155.1030 33 CFR 155.1035 33 CFR 155.1065 33 CFR 155.1070 33 CFR 155.240 33 CFR 155.720 MARPOL 73/78 I/20	0	•	• Ele	Condition ectrical fixtures on deck Explosion-proof or intrinsically safe No frayed or exposed wires Material condition	NVIC 2-89
	<ul> <li>Posted</li> <li>List of products carried by vessel</li> <li>Description of transfer system including a line diagram of piping</li> <li>Number of persons required on duty</li> <li>Duties by title of each person</li> <li>Means of communication</li> <li>Procedures to top off tanks</li> <li>Procedures to report oil discharges</li> </ul>		<u>Gas</u>			rtable gas detectors  Number  Type  Flammable gas detectors  • Calibrated	46 CFR 153.465
	mical Cargo Records:					<ul> <li>Tested</li> <li>Toxic gas detectors</li> </ul>	46 CFR 153.526
0	Approved Procedures & Arrangement Manual	46 CFR 153.490(a) 46 CFR 153.490(b)				<ul> <li>Capable of measuring all toxic cargoes authorized to be carried</li> </ul>	
0	Cargo record book	46 CFR 153.490	•			Calibrated	
0	Cargo information cards	46 CFR 153.907	0	F	-ix	ed gas detectors	46 CFR 153.526
0	Cargo location plan	46 CFR 153.907		•	•	Calibration  - Crew knowledgeable in operation	
	Cargo compatibility	46 CFR Part 150				<ul><li>Span gas available</li><li>Zeroing</li></ul>	
0	Cargo piping plan	46 CFR 153.910		•	•	Calibration curves available for all cargoes carried	
0	Shipping document	46 CFR 153.907		•	•	Tested	
0	Waiver letters carried	46 CFR 153.10					
0	Certificate of inhibition or stabilization <ul> <li>Date added to cargo</li> <li>Length of time effective</li> <li>Temperature limitations</li> </ul>	46 CFR 153.912					
0	Current copy of 46 CFR Parts 35, 150, and 153 aboard	46 CFR 153.905					
Notes:			Notes	S: _			

# **Certificates:**

☐ COI posted		46 CFR 31.05-5	☐ Abandon Ship Drill:						
	All pages visible	46 CFR 153.901	C	General alarms / signals	Familiarity with duties	Boat release			
	ISM Code	SOLAS 74/78 IX/3	N	fuster lists	Provide equipment	Boat operation			
	Safety Management System		N	fluster of crew	Familiarity with equipment	Egress procedures			
	Shipboard Operations Plan		C	crew response	Lower lifeboat	Davit-launched liferaft drill			
	Stability letter posted	46 CFR 35.08-1	L	anguage understood by crew	Brake operation	Communication w/ bridge			
	Waste management plan (oceangoing vessels ≥ 40 feet)	33 CFR 151.57		ifejackets SOLAS 74/78 III/18.3; MSM Vo	Engine start ol. II/22.C.7.h)	Lighting			
	Annual drug and alcohol program audit	46 CFR Part 16		ocation:		ne to Water:			
	Officers' licenses current	46 CFR 35.05-1	Γ	lotes:					
	GMDSS endorsement	47 CFR Part 80	-						
	FCC Station License Safety Radio Certificate		-						
	GMDSS maintenance personnel	47 CFR 80.1074	_						
	1st Class Radiotelegraph Operator's Certificate 2nd Class Radiotelegraph Operator's Certificate 3rd Class Radiotelegraph Operator's Certificate		- -						
	Required international safety convention certificates posted and valid	46 CFR 31.40-35	-						
	Liferaft servicing certificates	46 CFR 160.151-57(p)	<del>-</del>						
	Annual service	SOLAS 74/78 III/19.8	_						
	Cargo Gear Certificate	46 CFR 31.37-75							
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## **Section 2: Certificates and Documents**

Name of Certificate	Issuing Agency	ID#	Port Issued	Issue Date	Exp. Date	Endors. Date
Certificate of Documentation No Change	USCG					
Classification Document No Change						
Certificate of Financial Responsibility (COFR) No Change	USCG					
Safety Construction (SLC) No Change						
Safety Equipment (SLE) No Change	USCG					
Safety Radio (SLT) No Change						



#### **Involved Parties & General Information:**

Vessel's Representatives	
	-
	-
Phone Numbers	
Owner—Listed on DOC or COFR	
Owner—Listed on DOC of COFR	
No Change	
140 Change	
Operator	
No Change	

#### **Prohibited Chemical Cargoes:**

The following cargoes have been determined to be too hazardous to be carried in U.S. waters:

- 1. Acrolein
- 2. Chlorine (on self-propelled vessels)
- 3. Ethylenimine
- 4. Hydrofluoric Acid
- 5. Hydrogen
- 6. Hydrogen Chloride
- 7. Hydrogen Fluoride
- 8. Methylcyclopentadienyl Manganese Tricarbonyl
- 9. Nitric Acid (in concentrations > 70%)
- 10. Nitrogen Tetroxide
- 11. Oxygen
- 12. Phosphorus Trichloride
- 13. (Beta) Propiolactone

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Dangerous Chemicals in Bulk  Emergency Equipment  Cargo Operations  Cargo Tanks  Cargo Piping  Quick-closing Valves  Venting  Gauging  Pumprooms  Electrical Systems  Gas Detection  Section 5: Drills  Fire Drill  Abandon Ship Drill  Section 6: Appendices	32 33 34 35 36 37 38 39
Dangerous Chemicals in Bulk  Emergency Equipment Cargo Operations Cargo Tanks Cargo Piping Quick-closing Valves Venting Gauging Pumprooms Electrical Systems Gas Detection Section 5: Drills Fire Drill Abandon Ship Drill Section 6: Appendices Vessel Layout	32 33 34 35 36 37 38 39
Dangerous Chemicals in Bulk  Emergency Equipment Cargo Operations Cargo Tanks Cargo Piping Quick-closing Valves Venting Gauging Pumprooms Electrical Systems Gas Detection Section 5: Drills Fire Drill Abandon Ship Drill Section 6: Appendices Vessel Layout Cargoes Requiring a Response Plan	32 33 34 35 36 37 38 39
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Dangerous Chemicals in Bulk  Emergency Equipment Cargo Operations Cargo Tanks Cargo Piping Quick-closing Valves Venting. Gauging Pumprooms Electrical Systems Gas Detection  Section 5: Drills Fire Drill. Abandon Ship Drill. Section 6: Appendices Vessel Layout Cargoes Requiring a Response Plan Prohibited Chemical Cargoes Recommended US Vessel Deficiency Procedures	32 33 34 35 36 37 38 39 40 42 43
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# **Deficiency Summary Worksheet:**

Name of Vessel	VIN				
Deficiency	MSIS Code	Req't. Issued / Date Completed			
	<del></del>				

# **Total Time Spent Per Activity:**

Regular Personnel (Active Duty)							
ACTIVITY TYPE	TIVITY TYPE ACTIVITY TRAINING (PERS						

TOTAL ADMIN HOURS	TOTAL TRAVEL HOURS

Reserve Personnel							
ACTIVITY TYPE	ACTIVITY	TRAINING	(PERS) MI				

TOTAL ADMIN HOURS	TOTAL TRAVEL HOURS
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Auxiliary Resources						
TOTAL BOAT HOURS	TOTAL AIRCRAFT HOURS					

## **Conversions:**

Distance and Energy								
Kilowatts (kW	/) X	ζ	1.341	=	Но	rsepower	(hp)	
Feet (ft)	X	(	3.281	=	Me	ters (m)		
Long Ton (LT	Г) Х	(	.98421	=	Ме	tric Ton (t	)	
Liquid (N	OTE: Values are	approxim	ate.)					
Liquid	b	bl/LT		m³/t	bl	ol/m³		bbl/t
Freshwater	(	6.40		1.00	6	5.29		6.29
Saltwater	(	6.24		.975	6	5.13		5.98
Heavy Oil	(	6.77		1.06	6	6.66		7.06
DFM	(	6.60		1.19	7	'.48		8.91
Lube Oil		7.66		1.20	7	'.54		9.05
Weight								
1 Long Ton	= 2240 lbs			1 Metric Tor	າ =	2204 lbs	5	
1 Short Ton	= 2000 lbs			1 Cubic Foo	ot =	7.48 ga		
1 Barrel (oil) = 5.61 ft = 42 gal = 6.29 m <sup>3</sup>			1 psi = .06895 Bai of water			: 2.3106 ft		
Temperat	ure: Fahrenh	neit = Ce	elsius	(°F = 9/5 °C	C + 32	and °C :	= 5/9	(°F – 32))
0 =	-17.8	80	=	26.7		200	=	93.3
32 =	0	90	=	32.2		250	=	121.1
40 =	4.4	100	=	37.8		300	=	148.9
50 =	10.0	110	=	43.3		400	=	204.4
60 =	15.6	120	=	48.9		500	=	260
70 =	21.1	150	=	65.6		1000	=	537.8
Pressure: Bars = Pounds per square inch								
1 Bar =	14.5 psi	5 Bars	=	72.5 psi	•	9 Bars	=	130.5 psi
2 bars =	29.0 psi	6 Bars	=	87.0 psi		10 Bars	=	145.0 psi
3 Bars =	43.5 psi	7 Bars	=	101.5 psi				
4 Bars =	58.0 psi	8 Bars	=	116.0 psi				